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# Comparisons between Male and Female Deputy Sheriff Recruits in the Work Sample Test Battery

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Los Angeles County  
**Sheriff’s Department**

## ABSTRACT

**INTRODUCTION:** The job demands of law enforcement may require officers to perform strenuous tasks with little advanced warning. In addition to having to complete generic tasks (pushing, pulling and carrying), on-duty law enforcement officers (LEOs) may have to execute job-specific tasks (defensive tactics, vaulting obstacles, pursuing suspects). These job-specific tasks are the same for all LEOs, regardless of sex. Recruits will complete job-specific tests, such as the Work Sample Test Battery (WSTB) in California, intended to prepare them for these demands. The WSTB was designed to duplicate what a LEO may encounter on duty. **PURPOSE:** To determine differences between male and female deputy sheriff recruits in the WSTB. **METHODS:** A retrospective analysis was performed on 308 deputy sheriff recruits from five academy classes (males = 259, females = 49). The WSTB is comprised of five tests completed for time: a 99-yard obstacle course (99OC), 165-pound body drag (BD), 6-foot chain link fence climb (CLF), 6-foot solid wall climb (SW), and a 500-yard run (500R). These tests must be completed to a state-mandated minimum standard in order for recruits to graduate, and were typically performed in the last weeks of academy. Independent samples t-tests ( $p < 0.05$ ) and effect sizes ( $d$ ) were calculated to document any differences between the sexes. Effect size ranges were set as follows: trivial effect =  $< 0.2$ ; small effect =  $0.2 - 0.6$ ; moderate effect =  $0.6 - 1.2$ ; large effect =  $1.2 - 2.0$ ; very large effect =  $2.0 - 4.0$ ; and an extremely large effect =  $4.0+$ . **RESULTS:** Females were significantly ( $p < 0.001$ ) slower on all items of the WSTB when compared to males. Specifically, females were slower on the 99OC (males =  $18.78 \pm 1.39$  s; females =  $20.76 \pm 1.71$  s), BD (males =  $4.86 \pm 2.49$  s; females =  $6.71 \pm 1.78$  s), CLF (males =  $7.69 \pm 1.29$  s; females =  $9.48 \pm 1.55$  s), SW (males =  $7.39 \pm 1.17$  s; females =  $9.92 \pm 6.28$  s) and 500R (males =  $88.25 \pm 9.20$  s; females =  $100.41 \pm 6.28$  s). The effects ranged from small-to-large ( $d = 0.56 - 1.54$ ). **CONCLUSIONS:** Females scored lower on all WSTB items. Slower performance in job-specific tests could translate to slower performance in the tasks required in line of duty for many female LEOs while working alongside their counterparts. This may pose a liability to not only to themselves, but to their colleagues. Training staff should consider developing the physical qualities important for WSTB performance in females to enhance future job performance.

## INTRODUCTION

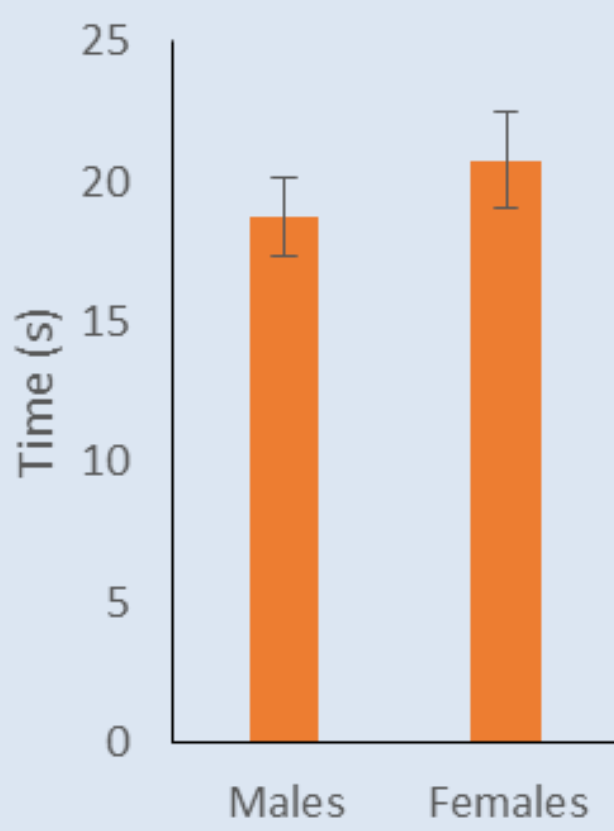
- The job demands of law enforcement may require officers to perform strenuous tasks with little advanced warning. Although the majority of their job consists of generic tasks (pushing, pulling and carrying), on-duty law enforcement officers (LEOs) may have to execute job-specific tasks (defensive tactics, vaulting obstacles, pursuing suspects). These job-specific tasks are the same for all LEOs, regardless of sex (1, 6).
- Recruits will complete job-specific tests at the end of academy training, such as the Work Sample Test Battery (WSTB) in California, intended to prepare them for these demands. The WSTB is comprised of five tests completed for time: a 99-yard obstacle course (99OC), 165-pound body drag (BD), 6-foot chain link fence climb (CLF), 6-foot solid wall climb (SW), and a 500-yard run (500R). These tests were designed to duplicate what a LEO may encounter on duty. The faster a recruit completes a test, the more points they may earn (3, 7).
- Generally, female recruits and officers perform poorer in fitness tests compared to males. For example, females perform significantly worse in tests requiring power in both upper- and lower-body measures (4, 5). If job-specific tasks are the same for all LEOs, then female recruits may still be at a physical disadvantage if their passing scores are lower than their male counterparts. Exploring differences in passing scores may illuminate this phenomena.
- The purpose of this study was to determine differences between male and female deputy sheriff recruits in the WSTB.

## METHODS

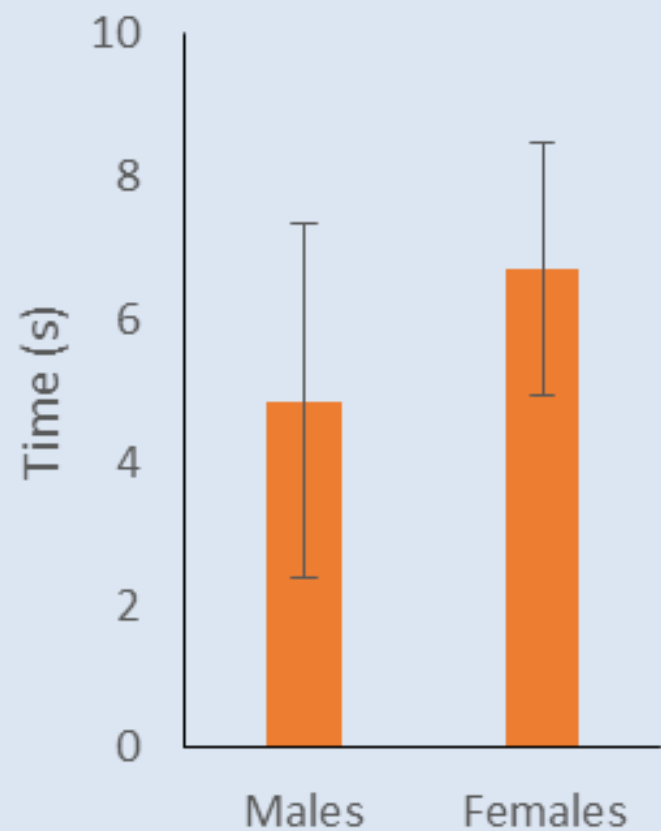
- Retrospective analysis was conducted on five academy classes from one LEA. This sample was comprised of 308 deputy sheriff recruits (age:  $26.29 \pm 4.63$  years; height:  $1.73 \pm 0.08$  m; body mass:  $79.67 \pm 14.54$  kg), which included 259 males (age:  $26.25 \pm 4.76$  years; height:  $1.76 \pm 0.07$  m; body mass:  $82.01 \pm 13.24$  kg) and 48 females (age:  $26.46 \pm 3.91$  years; height:  $1.63 \pm 0.07$  m; body mass:  $67.57 \pm 14.99$  kg).
- The WSTB, a California specific testing battery comprised of five tests (99OC, BD, CLF, SW, and 500R), must be completed to a state-mandated minimum standard in order for recruits to graduate. Typically, the WSTB is performed in the last weeks of academy. Each of the tests are performed at separate stations and timed to the nearest 0.10 s. Recruits are given two chances at each test with the exception of the 500R. The tests can be completed in any order, with the exception of the 500R which must be completed last.
- Independent samples t-tests ( $p < 0.05$ ) and effect sizes ( $d$ ) were calculated to document any differences between the sexes. Effect size ranges were set as follows: trivial effect =  $< 0.2$ ; small effect =  $0.2 - 0.6$ ; moderate effect =  $0.6 - 1.2$ ; large effect =  $1.2 - 2.0$ ; very large effect =  $2.0 - 4.0$ ; and an extremely large effect =  $4.0+$  (2).

## RESULTS

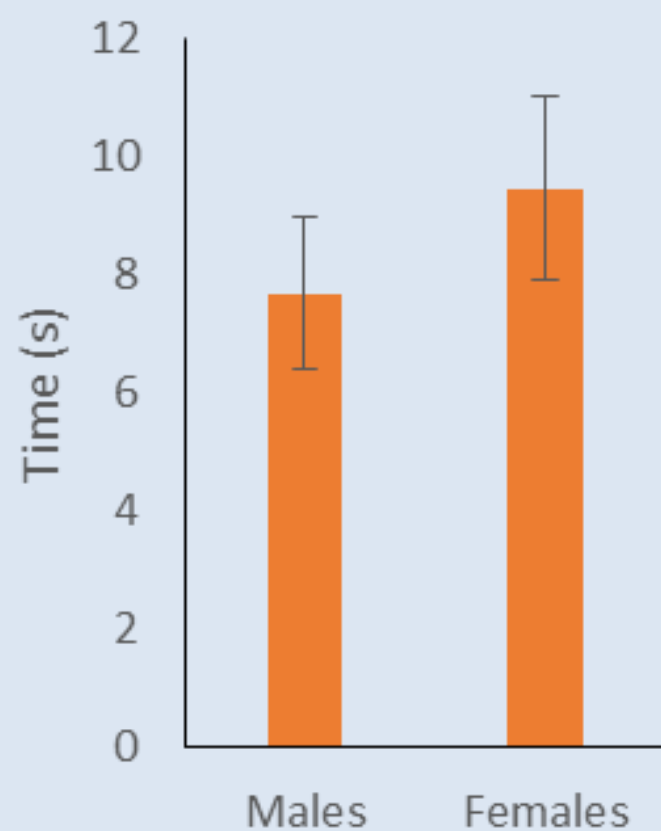
- Females were significantly ( $p < 0.001$ ) slower on all items of the WSTB when compared to males.
- The between-sex differences within the 99OC (Figure 1) had a large effect ( $d = 1.27$ ); the BD (Figure 2) had a moderate effect ( $d = 0.85$ ); the CLF (Figure 3) had a large effect ( $d = 1.26$ ); the SW (Figure 4) had a small effect ( $d = 0.56$ ); and the 500R (Figure 5) had a large effect ( $d = 1.54$ ).



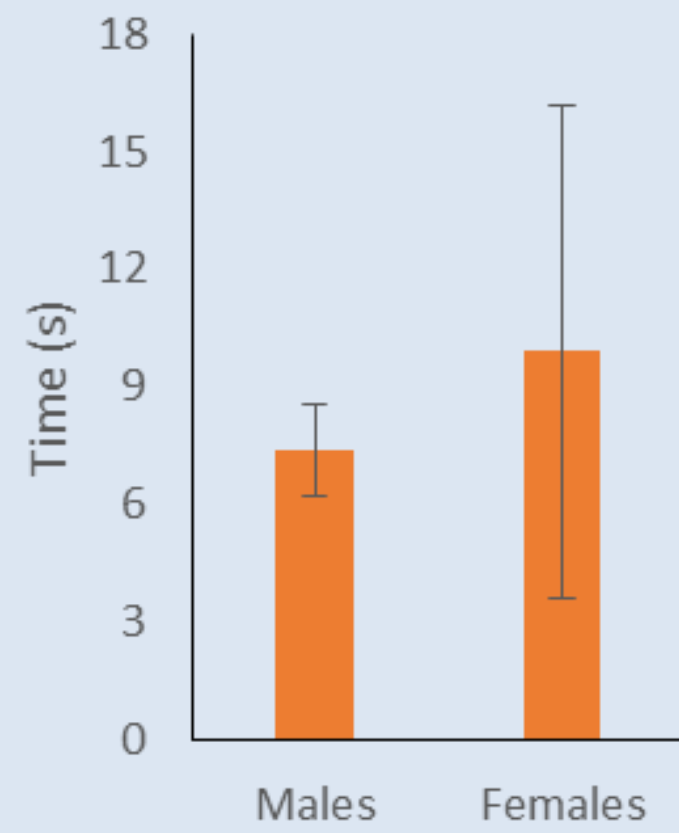
**Figure 1.** Male and female recruit performance on the 99OC.



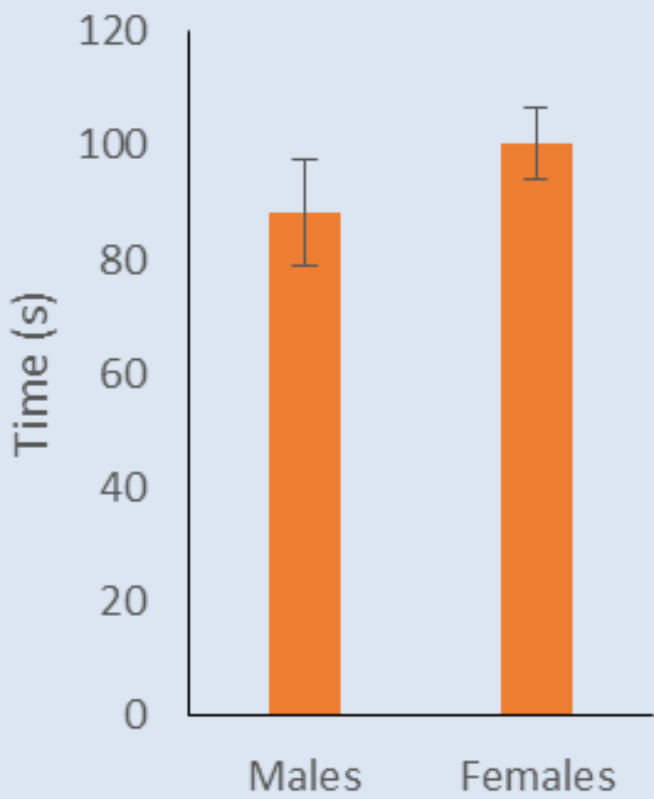
**Figure 2.** Male and female recruit performance on the BD.



**Figure 3.** Male and female recruit performance on the CLF.



**Figure 4.** Male and female recruit performance on the SW.



**Figure 5.** Male and female recruit performance on the 500R.

## CONCLUSIONS

- Females scored lower on all WSTB items. Slower performance in job-specific tests could translate to slower performance in the tasks required in the line of duty for many female LEOs while working alongside their counterparts. Although the majority of job tasks are sedentary by nature, when officers are required to take quick, precise action, the situations can be unforgiving. Therefore, slower performance may pose a liability to not only themselves, but to their colleagues.
- In the current findings, the areas in which female recruits were the furthest behind were the 99OC, CLF, and 500R. Upper-body strength, upper- and lower-body power, and aerobic capacity are underlying traits that affect those tests (3, 4). Indeed, Lockie et al. (3) found predictive relationships between WSTB tasks and fitness test items on the PT500 (a separate, agency specific testing battery). As that is the case, female recruits should consider strength, power, and aerobic capacity training in preparation for academy. Additionally training staff should consider developing these physical qualities while academy is ongoing in order to enhance female recruits’ future job performance.
- The physical limitations of many female recruits’ line up with job-specific demands measured by the WSTB. If female recruits are not properly prepared for these job demands (even though they may pass the WSTB), this could expose these recruits to preventable risk. Initially, the first step could be working on improving those physical abilities most relevant to job demands for female recruits, even after they graduate academy and begin working in the field.

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